

Appl. No. 10/748,830
Amdt. Dated October 19, 2006
Reply to Office Action of July 28, 2006

Amendments to the Claims

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

Claim 1 (currently amended): A color projection display device, comprising:

a light source adapted for providing white light beams;

a micro-mirror unit, the micro-mirror unit comprising a micro-mirror array comprising at least three micro-mirrors, each characterized with one single original color and each being configured so as to receive the white light beams incident thereupon, the white light beams having been emitted directly from the light source without being reflected; and

a projection lens;

wherein the micro-mirror unit is configured for being selectably switched between an on state and an off state according to a driving signal, the micro-mirror unit reflecting light beams emitted from the light source to the projection lens in the on state, the micro-mirror unit not reflecting said light beams to the projection lens in the off state, the projection lens enlarging and displaying the light beams reflected by the micro-mirror on a screen, the projection lens thereby being configured for generating images on the screen.

Claim 2 (original): The color projection display device as described in claim 1, wherein the micro-mirror unit is made by a

Appl. No. 10/748,830
Amdt. Dated October 19, 2006
Reply to Office Action of July 28, 2006

micro-electromechanical system.

Claim 3 (original): The color projection display device as described in claim 1, wherein the driving signal is generated by a pulse width modulation driving device.

Claim 4 (previously presented): The color projection display device as described in claim 1, wherein the micro-mirror unit comprises a complementary metal-oxide semiconductor layer, a metal layer, a torsion layer and a micro-mirror array formed on a silicon substrate.

Claim 5 (previously presented): The color projection display device as described in claim 4, wherein the micro-mirror unit further comprises an address electrode formed on the torsion layer for providing the driving signal to the micro-mirror array.

~~Claim 6 (cancelled): The color projection display device as described in claim 4, wherein the micro-mirror unit further comprises an address electrode formed on the torsion layer for providing the driving signal to the micro-mirror array.~~

Claim 7 (currently amended): The color projection display device as described in claim 65, wherein the driving signal comprises two digital states: one digital state maintaining one micro-mirror of the micro-lens array in the on state, and the other digital state maintaining the micro-mirror in the off state.

Appl. No. 10/748,830
Amdt. Dated October 19, 2006
Reply to Office Action of July 28, 2006

Claim 8 (previously presented): A color projection display device, comprising: a light source adapted for providing light beams, a light modulation unit for modulating colors of the light beams emitted from the light source, and a projection lens for projecting the light beams reflected by the light modulation unit onto a screen, the light modulation unit comprising:

a micro-mirror array comprising a red micro-mirror, a green micro-mirror, and a blue micro-mirror, each micro-mirror functioning as a color filter and being configured for receiving and reflecting the light beams directly emitted from the light source to the projection lens, each micro-mirror being configured for reflecting light beams emitted from the light source to the projection lens when in an on state and further being configured for not reflecting said light beams to the projection lens when in an off state; and

a driving circuit for providing a digital signal to the micro-mirror array to maintain each micro-mirror thereof one of in an on state and in an off state.

Claim 9 (original): The color projection display device as described in claim 8, wherein the micro-mirror array is made by a micro-electromechanical system.

Claim 10 (previously presented): The color projection display device as described in claim 1, wherein a pulse width modulator (PWM) is configured for controlling the driving circuit.

Claim 11 (previously presented): A color projection display device,

Appl. No. 10/748,830
Amdt. Dated October 19, 2006
Reply to Office Action of July 28, 2006

comprising: a light source adapted for providing light beams, a light modulation unit for modulating colors of the light beams emitted from the light source, and a projection lens for projecting the light beams reflected by the light modulation unit onto a screen, the light modulation unit comprising:

a micro-mirror array comprising at least three micro-mirrors, each characterized with one single original color, and functioning as a color filter and being configured for receiving and reflecting the light beams directly emitted from the light source to the projection lens; and

a driving circuit for providing a digital signal to the micro-mirror array to maintain each micro-mirror thereof in an on state or in an off state, each micro-mirror being configured for reflecting light beams emitted from the light source to the projection lens when in the on state and further being configured for not reflecting said light beams to the projection lens when in the off state; wherein through an on-off state change of each of said micro-mirror, a combination of the light beams defines at least 2^3 alternatives.

Claim 12 (previously presented): The color projection display device as described in claim 11, wherein the micro-mirror array is made by a micro-electromechanical system.

Claim 13 (previously presented): The color projection display device as described in claim 11, wherein a pulse width modulator (PWM) is employed for controlling the driving circuit.

Claim 14 (previously presented) The color projection display device as

Appl. No. 10/748,830
Amdt. Dated October 19, 2006
Reply to Office Action of July 28, 2006

described in claim 8, wherein a pulse width modulator (PWM) is employed for controlling the driving circuit.

Claim 15 (previously presented) The color projection display device as described in claim 1, wherein the micro-mirror unit is operated as a square mirror having aluminum evaporated on an outer surface thereof.

Claim 16 (previously presented) The color projection display device as described in claim 1, wherein the micro-mirror unit produces no color in the off state, thereby resulting in a black appearance.